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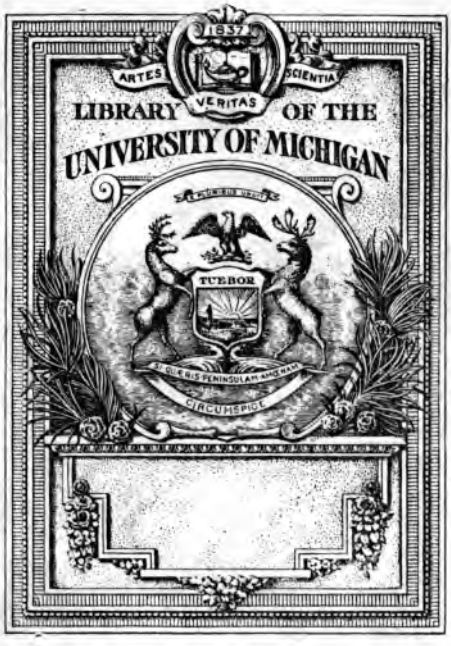
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VOLUME I. ECONOMIC PRINCIPLES

BY

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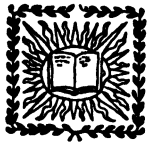

NEW YORK

THE CENTURY CO.

1916

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FOREWORD

The literature of economics is so extensive that a complete bibliography of some single chapters of a general text would fill a book. Many of the books cited below on special topics contain elaborate special bibliographies. General texts in economics are, with rare exceptions, not included here; the student can conveniently consult them on any topic by means of the index with which each of them is provided. Large use has been made, however, of the several volumes of selected readings in economics which have appeared within the past few years and which now are to be found in most college libraries. These are cited under brief titles as follows:

Materials, for Materials for the study of elementary economics, by members of the department of political economy of the University of Chicago, 1913.

Readings, Bullock, for Selected readings in economics, C. J. Bullock (ed.), 1907.

Readings, Hamilton, for Readings in current economic problems, W. H. Hamilton (ed.), 1914.

Source Book, for Source book in Economics, F. A. Fetter (ed.), 1912.

It is more than questionable whether the student of an elementary text should be required to read extensively outside in the more or less controversial literature of the subject. This is especially true of the field of the principles, covered in Volume I, where careful drill in definition and clear thinking are more to be sought than voluminous reading. Accordingly, no attempt has been made to cite the many writings that have contributed to the development of economic doctrine in its details in the last half century. The names of the authors and of their writings are to be sought by the more advanced student of theory in the voluminous special literature of the subject.

Where the conception developed in the text and the grouping of materials are along unconventional lines, the references in some cases represent a somewhat different point of view from that of the text, but are valuable for their suggestiveness. In other cases preference has been given to concrete examples embodying the principles presented.

The standard encyclopedias such as the American, the Britannica, the International, Johnson, etc., give large and increasing space to

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economic questions. The following are the chief special encyclopedias in this field:

Bliss, Encyclopedia of social reform (new ed., 1908). (A good popular handbook for American readers.)

Conrad, J. (ed.), Handwörterbuch der Staatswissenschaften (3d ed. in 7 vols., 1909). (The largest and best, especially for European subjects.)

Elster, L., Wörterbuch der Volkswirtschaft, 2 vols. (2d ed., 1896).

Lalor, J. J., Cyclopedia of political science and political economy, 3 vols. (Chicago, 1882). (Many good articles, but now much out of date.)

Palgrave, R. H. I. (ed.), Dictionary of political economy, 2 vols. (1894–1899). (Good; English in point of view, with some American contributions.)

Say, L. (ed.), Nouveau dictionnaire d'économie politique, 2 vols. (Paris, 1891–2).

Schönberg, G. (ed.), Handbuch der politischen Oeconomie, 3 vols. (4th ed., 1898). (A systematic collection of able monographs, but not alphabetically arranged.)

The exercises and questions here given are not intended merely to provide a quiz-list to test the student's memory on the reading. Their purpose is to stimulate the student's interest, quicken his observation, and to clarify his understanding of the principles by giving some drill in their use. They may helpfully be assigned in advance of the recitation, or, in other cases, used as a review. The present list contains only a part of the widely used questions given in the appendix of the author's "Principles of Economics" (1904, amplified in the third edition, 1911), the sources of which were there indicated. Many other questions and exercises that have been used in class work and in examinations in Princeton University and elsewhere have been added. Preference has been given, in this selection, to exercises of an arithmetic nature.

The following rules regarding written work have been found useful:

1. The student should have a slide rule, a common ruler, a triangular scale, one bottle each of black, blue, red and green India ink, a ruling pen, a compass, a protractor, ordinary pen and ink, unruled paper size $8 \times 10\frac{1}{2}$, cross-ruled paper and outline maps of the U. S.

2. All work should be finished with pen and ink, and the diagrams with India ink and a ruling pen.

3. Construct diagrams whenever it is thus possible to illustrate better the statistical data.

4. Use the line diagram for statistical comparisons extending over a series of time intervals, and the column, square, rectangle, circle or other device for comparisons of synchronous data.

5. Use the unruled paper for all exercises not requiring the simple line diagram, and cross-ruled paper for the latter.

6. References to the sources should always be given in full.

7. Each statistical table should be complete on a separate sheet if possible.

8. Enclose completed work in a manila cover.

Particular acknowledgment is made to my colleagues, Professors W. M. Adriance and D. A. McCabe, who originated a number of the most interesting and useful of the exercises, and to Dr. Stanley E. Howard, instructor in economics in Princeton University, for highly valued collaboration in the preparation of the copy in its present form.

The author will gratefully receive from teachers suggestions as to additional references and exercises that might desirably be included in a later edition.

Princeton, September, 1916. F. A. F.

MANUAL

OF REFERENCES AND EXERCISES IN ECONOMICS

MANUAL
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CHAPTER 1
PURPOSE AND NATURE OF ECONOMICS

REFERENCES.

Cossa, Luigi, An introduction to the study of political economy, 1893.

Keynes, J. M., The scope and method of economics. 1890 (2d ed. 1897).

Palgrave, Dictionary. Articles on "Economic science" and "Method of political economy."

QUESTIONS.

1. Has political economy anything to do with woman suffrage, the liquor problem, a republican *vs.* a monarchical form of government, the silver question?

2. Is economics a study of things or of men?

3. Shall a piece of coal be studied in geology, botany, physics, chemistry, or economics?

4. Do you expect to acquire wealth more easily as a result of the study of economics?

5. Of what practical use do you think economics is?

6. Is economics necessary to the understanding of the business world, or vice versa?

7. How wide a knowledge would a complete understanding of industrial society require?

8. Did the discovery of America make the study of economics more important?

9. In what respect are the laws of political economy like the laws of the physical sciences; and in what respect, other than their subject matter, do the laws of political economy differ from the laws of the physical sciences?

10. What well known method of discovery commonly used in the physical sciences is incapable of employment in economics, and why?

CHAPTER 2

CHOICE AND VALUE

REFERENCES.

Carver, T. N., The place of the theory of value in economics. Q. J. E., 17: 185–187. 1902–1903.

Fetter, F. A., The fundamental conceptions and methods of economics. International Congress of Arts and Sciences. 1904. Vol. 7, pp. 7–20.

Smart, W. T., An introduction to the theory of value. 1891 (2d ed. 1910). (A summary of "the Austrian doctrine," of importance in the history of economic thought, but not in accord with our treatment in all its details of terminology and analysis. Chs. I–III.)

Source Book, 275–283.

QUESTIONS.

1. If you found $10 to-day on the street, what would you do with it?

2. What would be the chief differences between your use of money now and at the age of five or the age of twelve?

3. Name Crusoe's wants in order of their importance.

4. Why did Crusoe work at all?

5. When Crusoe began to work at one thing, why did he ever stop to work at another?

6. Are the desires of a savage more easily satisfied than those of civilized men? Why?

7. What is it to be economical of money?

8. Have any goods intrinsic value? Prove your answer by two examples.

CHAPTER 3

GOODS AND PSYCHIC INCOME

REFERENCES.

Keasbey, L. M., Prestige value. Q. J. E., 17: 456–475. 1902–1903.

McDougal, Social psychology, 1908, pp. 1–18.

Stuart, H. W., The hedonistic interpretation of subjective value. J. P. E., 4: 64–84. 1895–1896.

QUESTIONS.

1. Is a book full of useful information an economic good? Is a head full of useful knowledge an economic good?

2. Is a ship at the bottom of the ocean, or gold in the mine, an economic good?

3. Are services, music, a theatrical performance, a gambler's pack of cards, economic goods?

4. How many motives led you to come to college?

5. If you ever worked for wages, or a salary, was that the only motive? What else?

6. If you could, would you do nothing always? Why?

7. Do men work better under threat or when their pride is appealed to?

8. Is pride as powerful a motive as greed, in economic action?

9. Give examples of personal services that are most immediately expressed as gratifications.

10. It was once usual to say that the teacher did not produce goods and the ditch-digger did; give reasons for and against such a statement.

11. A spends a certain sum for food and clothing; B buys liquor, becomes intoxicated, and causes a railroad wreck; C buys a grand opera ticket; D contributes to a fund for the provision of free lectures on hygiene in a congested section of a large city. State whether the individual in each case is actuated by economic motives. State clearly the reasons for your opinion in each case.

12. Do people actually expend their incomes so as to get the maximum benefit judged by a standard they would admit to be morally sound?

CHAPTER 4

PRINCIPLES OF EVALUATION

REFERENCES.

Smart, chs. IV–IX. (See comment under ch. II.)

QUESTIONS.

1. Do you ever take account of a difference of five cents in deciding whether to purchase?

2. If you never eat corn-bread, will the failure of the corn-crop affect your grocery bill?

3. What are complementary goods? Give some illustrations.

4. Is the last bait worth more when the fish are biting well?

5. Give examples of cases where part of a stock of goods is worth more than the whole.

6. A, B, C, and D represent four different sets of commodities. A stands for food, B for clothing, C for shelter, D for ornaments. The commodities exist in homogeneous increments. The first increment of A yields ten units of gratification; that of B, eight units; that of C, six; and that of D, three. Successive increments of each commodity yield one unit less of gratification. If each separate desire could be completely satisfied, how many increments of A, B, C, and D would be consumed?

Illustrate fully, and from your illustration derive a law of the choice of goods.

7. On a certain day a farmer comes to the village with a single bushel of new potatoes (all that have been brought that day to market), for which various persons are willing to pay the following (maximum buyer's) prices: A, $1.00; B, $.98; C, $.96; D, $.95. If the seller will not sell less than the whole bushel, what is the highest price he can get? How can he get the maximum possible price, and how may he be obliged to take less?

8. In a horse market there is at a certain time but one horse that meets the wishes of five prospective purchasers, who have in mind as subjective maximum buyer's valuations: A, $155; B, $148; C, $147; D, $146; E, $145. The seller, V, has in mind $135 as his subjective minimum valuation. In an open auction who will the purchaser be, and why?

9. John has twenty apples which he wishes to trade, and he has in mind as the maximum number he will give for other articles as follows: 7 apples for m, 5 for n, 4 for o, 2 for p, 6 for m′ (a second unit of m), 3 for n′, 1 for q, 1 for p′. He finds that the ratios of exchange prevailing on the market are as follows: m for 5 apples; n for 4; o for 3; p for 2; q for 1. How will he divide his purchases and why? Diagram as far as possible.

CHAPTER 5

TRADE BY BARTER

REFERENCES.

Fetter, F. A., The definition of price. A. E. Rev., 2: 783–813. 1912.
Materials, 443–445.
Readings, Bullock, 387–399.
Source Book, 3–7, 8–14.

QUESTIONS.

1. Why is trade profitable if it is fair?

2. Do you buy what you most desire?

3. What causes a demand for an additional supply of food? Of books?

4. Give illustrations of the difference between desire and demand.

5. Give examples of cases where supply is fixed, and demand varies.

6. Explain the motives and the reasonableness of trade in the case of barter between two consumers and compare this with trade carried on by middlemen (merchants). Show what is the fundamental motive making for trade in each case.

CHAPTER 6

MONEY AND MARKETS

REFERENCES.

Source Book, 34–47.

Readings, Bullock, 325–332, on English fairs and markets.

QUESTIONS.

1. Explain the advantages gained through the use of money in making exchanges. Are the advantages of exchange mutual when money is employed?

2. Where one-sided competition exists (one seller and more than one buyer, for example) indicate the upper and lower limits of the price at which a commodity will sell.

3. Show clearly the relation between the law of diminishing gratification and the law of demand in a market.

4. How does the geographical extension of markets augment the sum total of goods produced?

5. What effect on prices should be expected from an invention that makes possible the carrying of fresh meat from South America to England?

6. Describe the method of selling any product you know about. What is the market in which it is sold?

7. Describe the cases of selling through one, two, or more, middlemen (Source Book) and show how this is a trade between producer and consumer.

8. In a time of high excitement gold was sold for more at one side of the room than at the other side; how account for this?

9. If A buys of B wheat at $1.15 per bushel for immediate delivery, and if A at the same time buys of C wheat of the same grade at $1.25

for delivery on January 1st next, what will determine whether A, B and C are members of the same market?

10. Give examples of, and reasons for, two prices in the same market.

11. Does the boundary line between wholesale prices and retail prices coincide with the boundary line between competitive and non-competitive prices? Explain.

CHAPTER 7

PRINCIPLES OF PRICE

REFERENCES.

Kemmerer, E. W., The higgling of the market. Q. J. E., 17: 670–677. 1902–1903.

Materials, 376–380, 380–391 (Extracts from same source), 414–415.

Readings, Bullock, 354–386.

Smart, chs. X, XI.

Source Book, 15–25, 25–33 (Extracts from same source), 58–60.

QUESTIONS.

1. How are the valuations of goods by individuals in a regular market related to the prices prevailing in the market? Using the customary diagrams, explain carefully the meaning of the various points on the curves.

2. Are market prices fixed by the marginal pair?

3. Is the margin of advantage obtainable by a shrewd and selfish trader increased or lessened by an increase in the number of buyers and sellers of the commodity in which the trader and the others deal?

4. Can a commodity change its value without changing its price? Can it change its price without changing its value?

5. Would doubling all commodities affect their price?

6. Give examples you have seen of a higher price of one thing causing an increasing use of another.

7. Do you think that store-keepers fix the price of the produce they buy of the farmers? If so, to what extent?

8. Can brokers fix the price of grain on the market? How, and to what extent?

9. "Now that the preserving season is nearly over there are announcements of an approaching decline in the price of sugar. Coffee, however, has gone up a little more, and gives no present indications of a reverse movement, so that the breakfast problem is still a serious one. We might learn the English habit of drinking tea at breakfast, but

the exclusion of artificially colored tea has reduced the supplies of that commodity, and if the demand should be greatly stimulated by the change from coffee a marked advance in price might be the result."

Enumerate and classify the economic motives and forces that are implied in this editorial.

10. The market price of platinum about doubled in a certain period. A newspaper reported as follows: "Platinum is replacing gold and silver to some extent in the manufacture of neck chains, watch chains, and other ornaments. The higher the price of platinum gets, said a manufacturer yesterday, the wider grows the demand for it in replacing gold and silver.

"Prospectors in a number of states, in South America and in Canada, in all of which platinum has been found in small quantities, are searching for deposits more eagerly than ever before."

At any point of time in this period during which the price has been increasing how would the price for platinum, if the price were $30 per ounce, compare with the demand at the same time if the price were $25 per ounce?

Would the supply of platinum forthcoming for sale at $30 per ounce be greater or less than the supply of platinum forthcoming for sale at the same point of time at $25 per ounce?

11. In a market the would-be buyers will pay respectively the prices indicated (or less) for one unit of X: 10, 9, 8, 7, 5, 4, 3; the would-be sellers will take respectively the prices indicated (or more) for one unit: 1, 2, 3, 4, 5, 6, 7. Diagram the buyers' and sellers' curves. What will the price be? Which bidders will be included and which excluded?

12. A, B, C, and D are sellers of commodity X. Each has for sale 10 homogeneous units of the commodity. A can sell at the rate of $2.00 per unit; he is anxious to get more but he cannot accept less.

In like manner, B can sell for $4.00, C for $6.00, D for $8.00.

E, F. G, and H are buyers of the above commodity, and each wishes to buy 10 units. E can pay $10.00 per unit; he is anxious to pay less but he cannot pay more. In like manner F can pay $8.00, G $6.00, and H but $4.00.

If these buyers and sellers meet in a market, what will be the market price of commodity X?

13. At a certain time in the "market" for a certain commodity A is willing to buy one unit of the commodity at $1.20; two units at $1.15 each; three units at $1.10; four units at $1.05; or five units at $1.00. B is willing to buy one unit at $1.15; two at $1.10; three at $1.05; or four at $1.00. C is willing to buy one unit at $1.05, or two

at $1.00. W is willing to sell two units at $.95; three units at $1.00; four units at $1.05; five units at $1.10; or six units at $1.15. X is willing to sell one unit at $.95; two at $1.00; three at $1.05; four at $1.10; or five at $1.15. Y is willing to sell one unit at $1.05; two at $1.10; or three at $1.15. Z is willing to sell one unit at $1.15.

Find the market price which will result under these conditions, and illustrate by a diagram drawn to scale. Explain why this must be the price under these conditions.

14. In a given market at a given time

A is willing to buy 800 bushels of wheat at 86¢ a bu.
B is willing to buy 1,000 bushels of wheat at 83¢ a bu.
C is willing to buy 1,200 bushels of wheat at 81¢ a bu.
D is willing to buy 1,500 bushels of wheat at 79¢ a bu.
X is willing to sell 1,000 bushels of wheat at 76¢ a bu.
Y is willing to sell 2,000 bushels of wheat at 80¢ a bu.
Z is willing to sell 3,000 bushels of wheat at 82¢ a bu.
W is willing to sell 1,500 bushels of wheat at 86¢ a bu.

Where would the market price be fixed under the above circumstances? Show why. Who would be the marginal pair? Diagram. Discuss the question of value and price.

15. Suppose that the supply of wheat in the New York market is 200 million bushels when the price is 80 cents per bushel, while the demand at that price is 1400 million bushels; and suppose that the supply increases by 5 million bushels while the demand decreases by 7 million bushels for every increase in price of ½ cent per bushel. What market price will be evolved, and how many bushels will be bought and sold?

16. In a certain wheat market 20 million bushels of No. 2 wheat are demanded at $1.10 per bushel, while the amount offered at that price is 25 million bushels. Supply of, demand for, and price of, No. 2 wheat are so related that each and every variation of ½ cent in price per bushel is accompanied by a variation of 200,000 bushels in the demand and a variation of 300,000 bushels in the supply forthcoming.

What market price will be established in the above market and how many bushels of wheat will be exchanged?

Is there a marginal pair in the above market?

Suppose the relation between supply of, demand for, and price of, wheat remains unchanged, and suppose three million bushels of No. 2 wheat is brought into this market by dealers who, if forced to do so, will accept as little as 70 cents per bushel for their wheat. What change, if any, will this new quantity of wheat effect in the supply offered, the demand for, and the price of, No. 2 wheat?

17. A comes into a certain market willing to buy seven units of a commodity if the price is 85c, six units if the price is 90c, four units if the price is 95c, or three units if the price is $1.00. B comes willing to buy seven units if the price is 85c, five units if the price is 90c, three units if the price is 95c; or two units if the price is $1.00. C comes willing to buy two units if the price is 90c, or one unit if the price is 95c. X comes willing to sell one unit if the price is 95c, or two units if the price is $1.00. Y comes willing to sell one unit if the price is 85c, three units if the price is 90c, five units if the price is 95c, or six units if the price is $1.00. Z comes willing to sell one unit if the price is 90c, two units if the price is 95c, or three units if the price is $1.00.

If, before any exchange had taken place, a new buyer had come into this market willing to take four units at 85c, three units at 90c, two units at 95c, or one unit at $1.00, what would have been the resulting difference in the market-price and in the number of units exchanged?

Under such circumstances what will the market price be?

Diagram the buyers' and sellers' curves on the plan of the diagram in the text.

Explain just why the price cannot be more or less.

18. The market for a certain commodity on a given day is subject to the following conditions. At 7c per pound 60,000 lbs. will be offered, and 135,000 lbs. will be demanded. With a change in price of 1c per lb. supply will change to the amount of 20,000 lbs., and demand will change to the amount of 40,000 lbs. Changes in price of fractional parts of a cent result in proportional changes in both supply and demand. Find what the market price would be, and explain why the market price must be at just that figure and no other under the given conditions. Make a diagram of the supply and demand curves.

19. The N. Y. cotton market on a given day is subject to the following conditions. At 8c per pound 800,000 lbs. will be offered and 1,700,000 lbs. will be demanded. With a change in price of 1c per lb. supply will change to the amount of 200,000 lbs. and demand will change to the amount of 600,000 lbs. Changes in price of fractional parts of a cent result in proportional changes in supply and in demand. Find what the market would be and explain why the market price must be at just that figure and no other under the given conditions. Make a diagram of the supply and demand curves.

20. Before any exchange takes place in the market described in the preceding question, and while the subjective valuations of all the would-be buyers and sellers already there remain unchanged, suppose that a new supply of 300,000 pounds of cotton is thrown on the market by

sellers willing to take as little as 8⅜ cents per pound, while an additional purchaser bids for 100,000 pounds at not more than 9¼ cents. What will be the market price under these conditions, and why?

21. In a perfectly competitive market holders of wheat are ready to offer in exchange for rice an aggregate of

1000 bu. of wheat when each bu. of wheat will bring 2 bu. of rice.
950 bu. of wheat when each bu. of wheat will bring 1.8 bu. of rice.
925 bu. of wheat when each bu. of wheat will bring 1.7 bu. of rice.
900 bu. of wheat when each bu. of wheat will bring 1.6 bu. of rice.
860 bu. of wheat when each bu. of wheat will bring 1.5 bu. of rice.
840 bu. of wheat when each bu. of wheat will bring 1.4 bu. of rice.
820 bu. of wheat when each bu. of wheat will bring 1.3 bu. of rice.
800 bu. of wheat when each bu. of wheat will bring 1.2 bu. of rice.

The holders of rice (if the market afforded no better terms) would take an aggregate of 800 bu. of wheat, if each bu. of wheat could be had for 3⅛ bu. of rice; and at a ratio of exchange just twice as favorable to the rice holders, the rice holders would be ready to take an aggregate of wheat larger by ⅛ than the aggregate of wheat the rice holders (if the market afforded no better terms) would take at the less favorable ratio.

Determine the market price of rice per bushel.

22. A, B, C, and D have wheat, and will exchange it for cloth.

If 1 bu. fetches 1 yd., A, B, C will trade, respectively, 0, 0, and 60 bu.
If 1 bu. fetches 2 yd., A, B, C will trade, respectively, 20, 10, and 70 bu.
If 1 bu. fetches 3 yd., A, B, C will trade, respectively, 45, 20, and 75 bu.
If 1 bu. fetches 4 yd., A, B, C will trade, respectively, 60, 30, and 80 bu.

D has a hundred bushels which he must sell at any price (in cloth) that comes to prevail in the market.

Those who offer cloth for wheat will in the aggregate offer 100 yards, if 4 yards fetch 1 bushel; 150 yards, if 3 yards fetch a bushel; 200 yards, if 2 yards fetch 1 bushel; and 239 yards, if 4 yards fetch 1 bushel.

With perfect competition among all traders determine the price that must prevail in the market; and explain why that price must prevail.

23. On the Berlin Stock Exchange bids and offers for a certain stock were received as follows on a given date:

Bids for 15 shares @ 126M., for 20 shares @ 125M., for 30 shares @ 124M., for 55 shares @ 123M., for 80 shares @ 122M., for 105 shares @ 121M.

Offers for 5 shares @ 121M., of 15 shares @ 122M., of 20 shares @ 123M., of 25 shares @ 124M., of 45 shares @ 125M., of 80 shares @ 126M.

Where should the price be fixed? Why? What would happen were *it fixed above or below* this point?

CHAPTER 8

COMPETITION AND MONOPOLY

As only the more elementary aspect of monopoly is treated in this chapter, the references to the subject will better be given later. This will be done partly in chapter 31, below, and more fully in connection with the trust problem in Volume II.

QUESTIONS.

1. Is there competition between the owner of good land and the owner of poor land?

2. Are the tuition charges made by universities competitive prices?

3. Has the owner of a poor gold-mine a monopoly? Has the owner of a rich mine a monopoly?

4. Does the ownership of land give a monopoly? The ownership of a horse?

5. In what sense is a street-railway a monopoly?

6. In New York City, when the fare on the elevated roads was ten cents, the fare collected in a certain year were 115,109,591. The fare was reduced by legislative act to five cents, and the fares collected during the next year were 158,963,232. What economic law is illustrated by this statement?

If a statute could effect a reduction of fifty per cent in the price of the average loaf, how would the subsequent change in the consumption of bread compare with the change above indicated in local railway traffic due to a similar reduction in price?

7. In a certain market there are seven groups of competing sellers, A to G, and seven groups of competing buyers, H, J, K, L, M, N, and O. Each group is composed of the same number of persons, and each offers and demands ten bales of cloth. The value of each bale ranges from $1.00 to A to $7.00 to G among the sellers, and from $9.00 to H to $3.00 to O among the buyers. What will be the market price of bales of cloth in this market? Prove your answer. In what way or ways could a monopoly of cloth be effected in this market, and what would be the monopoly price?

8. In a certain market the demand for a certain commodity at various prices is as follows: at 20 cents 400 units; at 25 cents 270 units; at 30 cents 330 units; at 35 cents 300 units; at 40 cents 250 units; at 45 cents 200 units; at 50 cents 170 units.

At what figure would the price be fixed by a monopoly which is seeking to maximize its gross receipts?

What will be the market price if conditions in this same market

are competitive and the amounts offered at the various prices are as follows: at 20 cents 100 units; at 25 cents 150 units; at 30 cents 225 units; at 35 cents 300 units; at 40 cents 350 units; at 45 cents 450 units; and at 50 cents 600 units? Plot the two curves.

9. A part of a statement issued by the Standard Oil Company runs as follows: ". . . the level of prices for refined oil to-day in the United States is lower than at any time during recent years. . . . As a direct result of these prices the consumption of refined oil in this country is increasing. . . . (The company proposes to cut the prices for refined oil in foreign countries) to increase the world's consumption."

State what economic law is implied in the above paragraph.

Explain the psychological basis on which the law fundamentally rests.

CHAPTER 9

AGENTS FOR CHANGING STUFF AND FORM

REFERENCES.

Bogart, E. L., Economic history of the United States. 1907 (2d ed. 1912). Chs. XXII, XXIII, XXVII, XXVIII.

Callender, G. S., Selections from the economic history of the United States, 1765–1860. 1909. Ch. IX.

Copeland, M. T., The cotton manufacturing industry of the United States. 1912. Chs. IV, V.

(These references and those of the next chapter give some concrete illustrations of the agents and processes treated in the text.)

QUESTIONS.

1. Are there different economic terms for hewn and unhewn blocks of stone? What makes the difference?

2. Give examples of changes of form that have affected the value of goods.

CHAPTER 10

AGENTS FOR EFFECTING CHANGES OF PLACE AND TIME

REFERENCES.

Bogart, chs. XXIV, XXV.

Callender, ch. VIII.

Readings, Bullock, 165–183, on localization and geographical distribution of industries.

Source Book, 81–90.

QUESTIONS.

1. Mention any cases you can think of where merely changing the place of things added to their value; or where the mere lapse of time added to the value of the thing.

2. Are merchants producers of wealth, or are their profits merely subtracted from the wealth already produced?

3. Does the railroad add to the value of the freight it carries? Why?

4. Is there any causal relationship between commerce and manufactures? If so, in what way?

5. Give examples within your observation of improved productive processes increasing exchange; of the reverse.

CHAPTER 11

CONSUMPTION AND DURATION

REFERENCES.

Materials, 175–178.

Matheson, E., Depreciation of factories and their valuation. 1884.

Palgrave, article on "Depreciation."

Peters, A. H., The depreciation of farming land. Q. J. E., 4: 18–33. 1890.

Source Book, 117–119.

QUESTIONS.

1. In what ways can a piece of iron be consumed, economically speaking?

2. What methods are adopted to keep up the efficiency of factories?

3. Must a depreciation fund be set aside, in addition to a fund devoted to all possible repairs and upkeep in the case of

(1). A lumber company.

(2). A coal mining company.

(3). A cotton milling company.

Give reasons in each case.

4. Explain carefully the ideas of depreciation and repair, and show to what economic problems described in the Source Book they apply.

5. How does the allowance made by the Tariff Board for repairs and depreciation of cotton manufacturing machinery compare with that for repairs and depreciation of the buildings? What difficulties were encountered by the Board in attempting to ascertain the proper allowances for these purposes by an examination of the actual expenditures

for repairs and the actual depreciation? How were the allowances made by the Board arrived at? See Source Book.

6. A certain street railway company possessing a perpetual franchise, devoted enough of its gross earnings to upkeep so that its plant was maintained in perfect repair and was continually improved by the adoption of new types of machinery and equipment to replace the old. In addition the company set aside a depreciation fund sufficient to replace the entire plant at the end of twenty years. Because of the perpetual franchise, the street railway's right to continue doing business was unquestioned. Was the setting aside of a depreciation fund required by good business principles in this case?

7. Criticize the statement that, in an economic sense, land is a "fixed stock for all time."

CHAPTER 12

THE PRINCIPLE OF PROPORTIONALITY

REFERENCES.

The problem discussed in this chapter is that of the best relation of different factors at a certain time, a "static" problem (as that term is explained in Chapter 32). It has, however, been discussed in the past in connection with, and under the same name as, the "dynamic" changes in the general productiveness of labor that go with a changing environment. The older writings, therefore, usually involve this confusion and are of value only to the special student of doctrine. The most notable of the modern criticisms pointing out the existing confusion, was given by

Commons, J. R., The distribution of wealth, 1893, pp. 116–159, on diminishing returns and rent.

QUESTIONS.

1. Is it possible to do twice the amount of business in any storeroom by doubling the stock and the force of clerks?

2. Is it possible to expand a university indefinitely by increasing the force of teachers and the equipment, without enlarging the buildings?

3. Why do men cultivate two acres instead of one? Where land is plentiful, why do not men cultivate two acres instead of one?

4. Are there any things, not free goods, that could be indefinitely increased without increasing difficulty?

5. English farmers raise thirty-five bushels of wheat per acre, *Americans* perhaps fifteen; why this difference?

6. Why did people go to Dakota and Iowa when there was still room in New England?

7. Why put up a twenty-story building? Why not build a fifty-story one?

8. If money income is laid out in different lines so as to maximize the satisfaction derived from the total expenditure, how will the satisfaction derived from the dollar on the margin of the expenditure for food compare with the satisfaction derived from the dollar on the margin of the expenditure for fuel? Give reasons.

9. There is a factory in which 100 machines are operated by 250 hands, and which turns out a product worth on the market $976,000. Would it or would it not be profitable to double the number of operatives and machines in this factory? State clearly the economic law involved.

10. Under what circumstances will the margin (extensive) of utilization of a given class of use-bearers be extended? Illustrate from two distinct occupations.

11. When there exist indirect agents of different degrees of effectiveness for the production of the same commodity, what is the fundamental cause which explains how the agents of inferior efficiency are employed at the same time as the agents of superior efficiency for the production of the commodity in question?

12. When there are productive agents of different degrees of productiveness, and when it is physically possible to obtain from the better grades of productive agents as much per year as is now obtained by working both the better and poorer grades, to what economic law is it due that the poorer grades are utilized along with the better grades? Explain how the law in question renders this usage necessary.

CHAPTER 13

THE CONCEPT OF USANCE-VALUE

"Usance-value," as a concept and as a technical term, is new in the text. The idea is treated in the older texts in part (only) in connection with what they call "economic rent," and with the "uses" of goods. The word "usance" is defined by Prof. Alfred Marshall in a meaning closely approaching ours, but was not further employed by him. In the following reference the idea was pretty fully suggested by a brilliant writer under the term (translated) "material services of goods" but he made no further application of the concept.

Böhm-Bawerk, E. von, Capital and interest (Eng. trans. 1890), pp. 219–227 on the true conception of the use of goods.

QUESTIONS.

1. Give a list of material agents that are yielding non-material uses.

2. It is usual to call the use of a house for business purposes a productive use, but its use as a residence an unproductive one. What reasons are there for and against this?

3. Why should the use of a machine that never can be a direct cause of gratification, have a value that men will pay for?

4. Give examples of wealth never becoming a direct cause of gratification, yet whose possession is greatly valued.

5. How may the value of the uses of agents be reduced "independently of their material condition"? Illustrate from actual happenings.

6. Explain clearly the connection between the operation of the principle of proportionality and the values of the usances of the agents in the following cases: (a) If several acres of land of equal fertility and of equally favorable location are used in producing the same crop. (b) If a number of acres of unequal fertility are used in producing the same crop.

7. Give reasons for attributing value in exchange to the waves of the ocean; to a waterfall, a water-wheel, a loom, a piece of cloth, a dress made of the cloth. Show the connection between these things.

8. How can the use of a flock of sheep be of value to one who must return them all to the owner?

9. Two machines of the same pattern are used in the same factory in the production of the same kind of goods. State briefly the circumstances which may cause the value of the use of one of these machines to differ from that of the other.

10. A farmer has several hundred acres of land of equal fertility and practically of equal accessibility. He devotes some of it each year to wheat, some to hay, and some to pasture. How does the usance of the marginal acre devoted to wheat compare with that of the marginal acre under hay and with that of the marginal acre given up to pasture? How would you arrive at the usance in each case?

11. How does a new railroad affect the value of the land it passes through?

12. Mention any cases you may have seen where a greater value was imparted to land by a newly discovered use.

13. A tunnel was made to drain a mine; the stock doubled in price. Was it really the stock, the old mine, or the new hole in the mountainside that had increased in value?

CHAPTER 14

THE RENTING CONTRACT

REFERENCES.

Allinson, E. P., and Penrose, Boise, Ground rents in Philadelphia. Q. J. E., 2: 297–313. 1888.

Leslie, T. E. Cliffe, Land systems and industrial economy of Ireland, England and continental countries. 1870.

Materials, 639.

Mill, J. S., Principles of political economy. 1848. Bk. II, chs. VI–X.

Source Book, 61–67, 68–74.

QUESTIONS.

1. What things beside land are rented?
2. What is the form of contract used in the renting of farms, business buildings, and residences, in the community where you live?
3. What are the difficulties in determining tenants' improvements?
4. What is stumpage? Does it differ from rent?
5. What do you know about the methods of renting mines?
6. What characteristic feature of economic rent appears in the contrast between the renting contract and the royalty contract. Explain.
7. Explain a rent charge, noting by whom, to whom, out of what, in return for what typical consideration, and for what period the rent charge is payable.
8. Is contract rent a net income to the man who receives it? Give specific reasons for your answer.
9. If you owned the Golden Gate, or the harbor of New York, could you rent it?

CHAPTER 15

PRINCIPLES OF RENT

REFERENCES.

Fetter, F. A., The passing of the old rent concept. Q. J. E., 15: 416–455.

Taylor, H. C., The theory of rent and American agriculture. A. E. Rev., IV (no. 1, supp.): 108–112. Discussion, 113–114. 1914.

QUESTIONS.

1. How are the economic rents of agents already in use affected when the margin of utilization is extended? Explain clearly why the rents are affected in this way and illustrate by an example.

2. What is the effect of the presence of lower grades of agents upon the value of the higher?

3. In the light of your answer to the preceding question explain what effect the extension of the margin of utilization has upon the rents yielded by the better use-bearers. Illustrate.

4. How does the manner in which the American forests and farms have been used illustrate the law of rent? Give reasons. Show the application of correct principles to our policy for the future.

5. What effect had the opening up of new agricultural lands in the West upon the rents of farm lands in New England? Do these facts constitute a contradiction of the principle that an extension of the margin of utilization is accompanied by a more intensive utilization of agents already in use? Give clearly the reasons for your answer.

6. How does the hire of a team of horses resemble the rent of land?

7. How would the rent of a rocky island be affected if it became a summer resort?

8. Does the rent of pianos, typewriters, or masquerade-suits depend on the value of the thing rented? Is the rental a moderate return on the investment?

9. Compare gross rents of urban real estate with net rents, showing the items that enter into the difference.

10. "Almost the entire northern and eastern half of the country (the United States) is being linked together by a network of trolleys. Millions of acres hitherto idle because too far from the market to make profitable cultivation possible will be tilled and planted."— *The Sun* of the issue of Thursday, 3 January, 1907. Other things being equal, what will be the effect of the above fact upon the rentals of farm lands?

11. On three pieces of land of various grades of fertility and at various distances from the main market, the gross production is respectively 30, 25, and 20 bushels of wheat per acre; and it requires 2, 3, and 4 bushels of these respective amounts to be given for transportation to market. Will the net rent, expressed in bushels of wheat, be 28, 22, and 16 bushels of wheat respectively? Give reasons.

12. A chemical discovery increases the yield of a certain small area of cotton growing land of poor quality. The chemical is inexpensive and can be applied advantageously only to this particular land. What effect will this discovery have on

(1) The rent of land on which it is used?

(2) The rent of the best grades of cotton land?

(3) The rent of cotton land of medium quality?

13. Suppose an island devoted *entirely* to agriculture, every square foot of which has the same fertility, accessibility, and durability as every *other square foot.* Would rent exist on this island? Reasons.

14. Do improvements in agriculture increase or decrease the rent of land?

CHAPTER 16

HUMAN BEINGS AND THEIR ECONOMIC SERVICES

REFERENCES.

Materials, 640–643.

QUESTIONS.

1. Is dancing labor? Is the dancing of a dancing-master labor? If he would rather dance than eat, is it labor?

2. "Washing of clothes is unproductive labor; therefore as little of it should be done as possible." Criticize the argument.

3. May a singer of songs or a mixer of drinks be called a productive laborer?

4. Discuss the truth of the following: the building of the tower of Babel, whose top was designed to reach unto heaven, was productive labor, because the workers on the tower got their pay for their work.

5. Is the labor that would be required to satisfy the totality of human desires for economic goods limited or unlimited?

6. How does the decrease of the death rate alter the proportion of the working life of the average worker as between years when he is mainly a consumer (because of youth or old age) and years when he is engaged in contributing to his own support and the support of those dependent on him?

CHAPTER 17

CONDITIONS FOR EFFICIENT LABOR

REFERENCES.

Carlton, F. T., The history and problems of organized labor. 1911. Ch. XVII.

Goldmark, Josephine C., Fatigue and efficiency: a study in industry. 1912.

Lapp and *Mote*, Learning to earn, 1915.

Materials, 199.

Source Book, 157–162.

Spahr, C. B., America's working people. 1900.

QUESTIONS.

1. Is hunger the cause of food?

2. What are the necessary conditions to the building of a house?

(a) natural forces; (b) changes in material things; (c) human activities; (d) social conditions?

3. Is the public school system an economic factor? Where among the four preceding heads would you classify it?

4. With a given number of workers, what may be causes of differences in the labor-supply?

5. Which would be of the greatest economic advantage, to increase by 50 per cent the intelligence, the physical strength, or the integrity of the workers of this country?

6. Would you say that differences in ability at manual trades are due to practice or to native talent? If to both, in what proportion?

7. Would men work better if they ate more?

8. What moral agencies increase the efficiency of labor?

9. Is there a strong selfish motive for men to increase their efficiency in most industries? How effective is it?

10. What effect has republican government on the efficiency of labor?

11. Is the variety of occupation greater or less than formerly? What is influencing the change?

12. What gain is it for men to work together instead of singly?

13. Is there any other kind of limitation upon the division of labor than "the extent of the market"? Explain and illustrate.

CHAPTER 18

THE VALUE OF LABOR AND THE CHOICE OF OCCUPATIONS

REFERENCES.

Adams, T. S., and *Sumner, H. L.*, Labor problems. Ed. 1914. Ch. XI.

Cairnes, J. E., Leading principles of political economy newly expounded, 1874, pp. 57–73.

Carver, T. N., The occupational distribution of the labor supply. A. E. Assn. Bul., 4th ser., 2: 204–206. 1911.

Readings, Bullock, 543–555 on wages in different occupations.

Source Book, 176–183.

QUESTIONS.

1. If rewards were equal, what would determine the choice of work?

2. Which would you prefer, to clerk in a store at $1.50 a day, or to lay masonry at $2? Why?

3. What is the effect on wages of differences in the pleasurableness, social distinction, expense of preparation, of occupations?

4. If accidents are more frequent in one occupation than in another

requiring equal skill, are wages higher in consequence, and, if so, in what proportion? Examples.

5. Do sons usually follow the fathers' trades? Is it more or less common than formerly for them to do so?

6. Mr. James Bryce said that the incomes of American university professors were much less than those of men of corresponding ability and training in law and medicine. If true, why?

7. Are charity workers usually well paid? Why?

8. Do you know any persons who work from a sense of duty alone?

9. What is the effect of free common schools on the comparative wages of skilled and of unskilled laborers?

10. What would be the effect of technical and industrial schools on the wages of artisans?

11. If a man is not content with $2 a day, why does he not do work that is paid $5 a day?

12. How do the nominal wages paid for farm labor compare with the real wages of this kind of labor?

13. How is the blacksmith free to compete with the physician and how not? In what sense have we assumed that competition exists?

CHAPTER 19

PRINCIPLES OF WAGES

REFERENCES.

Compton, Wilson M., Wage theories in industrial arbitration. A. E. Rev., 4: 324–342. 1916.

Davidson, J., The bargain theory of wages. 1898. (Valuable for its survey of doctrines rather than for its attempt at a positive theory.)

Readings, Bullock, on historical changes in the rate of wages.

Source Book, 184–186, 199–205.

QUESTIONS.

1. In what way does labor get paid, and who pays it?

2. A manager pays a prima donna so much for each evening's performance. How far is there here any analogy to rent?

3. Are wages independent of the other kinds of income?

4. Are fine products high in price because wages are high, or vice versa?

5. State the economic conditions most favorable to real wages. Give reasons.

6. If by the completion of a new railroad there are rendered accessible

lands hitherto unused whose productive capacity exceeds that of a part of the land already under cultivation.

(a) What effect will the accessibility of the new land have upon wages and land rent?

(b) Will both, either, or neither increase absolutely?

(c) Will wages and land rent bear the same relative magnitude to each other?

Give reasons for your opinion in each case.

7. Is a high rate of money wages an advantage to a country? If so, wherein? If not, why not?

CHAPTER 20

TIME-PREFERENCE

REFERENCES.

On this and the next chapter no helpful references are to be found in the older literature. The subject so far as it was treated was in connection with the subjective aspects of the interest problem (with "economic interest" as it came to be called). So, in the old doctrine of "abstinence" and in much of the more recent discussions introduced by the Austrian economists, the concept of time-preference was pretty clearly recognized. Nowhere, however, in the older literature was the concept of time-preference consistently developed and applied as the subjective aspect of a theory of contractual interest.

QUESTIONS.

1. "Present goods are, in general, worth more than an equal quantity of goods of identical quality available at a future date." Under what conditions is the proposition untrue? What economic process would be impossible if the proposition were always true?

2. Would there be time-discount if there were no borrowing or lending? If so, how would it be manifested?

3. Give three examples (different in kind) of time-preference which are not cases of contract interest.

4. How is the relative value of present goods and future goods determined?

CHAPTER 21

RATE OF TIME-PREFERENCE

QUESTIONS.

1. Give examples of a high cost for the use of wealth without the *borrowing of money.*

2. Give some examples of the neglect of repairs through lack of resources, and show how the neglect involved time-value.

3. A person gives in a particular instance only twenty-five times the annual rent of a certain durable agent in exchange for the right to its rentals in perpetuity. What, under these circumstances, is the prevailing rate of time discount? How is this rate determined?

CHAPTER 22

MONEY AND CAPITALIZATION

REFERENCES.

Hildebrand, Bruno, Jahrbücher der Nationaloekonomie, vol. 1. (Notable article on the growth of the money economy.)

QUESTIONS.

1. Can all kinds of wealth be measured as capital? Give reasons for your answer.

2. When a man says he has a certain capital invested in his business, does he mean to include the value of the land and buildings?

3. What is the meaning of the phrase, "a capitalistic age"?

4. The discovery of the western hemisphere resulted in pouring upon European markets an enormous amount of money made from the precious metals extracted from American mines. In the absence of any other disturbing cause, would this rapidly increasing amount of money increase or diminish the number of years' purchase for which rent-charges would thereafter sell, if we assume that, on the average, twenty years' purchase had been the rate prevailing prior to the increased money supply? Give reasons for your answer.

5. What is meant by the present worth of a sum of money due at a future time? If the use of money is worth 5 per cent annually, what is the present worth of $525 due one year from now? If the use of money is worth 3 per cent annually, what is the total present worth of three annual incomes of $100 each, the first due in one year, the second in two years, and the third in three years?

CHAPTER 23

CAPITALIZATION OF MONETARY INCOMES

REFERENCES.

Bauer, John, The idea of capitalization as applied to public service corporations, Journal of Accountancy, July, 1916.

Lyon, W. H., Capitalization: a book on corporation finance. 1912.

Materials, 635–639.

Ripley, W. Z., The capitalization of public-service corporations. Q. J. E., 15: 106–137. 1900–1901.

Source Book, 120–129.

QUESTIONS.

1. Show, where possible, in regard to (a) psychic income, (b) usance, (c) capitalization, (d) time-value,— how each is seen in the case of wine, a dwelling, a factory, a $5 gold piece, and a day's labor.

2. Explain the relation between usance-value, capital-value, and the rate of time discount.

3. Are there any goods whose rental value and capitalized value are the same? If so, give examples of such goods.

4. If the rent of a tent is $10 a year and a man expects to go camping for five years, how much can he afford to pay for a tent bought outright? Show the various considerations entering into the calculation.

5. Show the resemblance to the purchase of a rent charge involved in the purchase of a dwelling house; a factory; a government bond.

6. Why is the compounded discount of future incomes always such as to yield the same rate of simple interest on the capital?

7. An estate (treated as durative) with a rental of $100 a year sells at $2000. What rate of yield on the investment does this give? If it sells at $2200? $2500? $1600? $1800?

(Formula is $r = \frac{a}{P}$ Where r is the rate, a the annuity or annual income, and P the principal or present worth. Prove by the formula $Pr = a$.)

8. If $943.40 is paid for a note of $1000 due in one year, what rate of yield on the investment is involved? If $961.54 is paid? If $956.90 is paid?

9. Take first the rate found in question 8, and using it as a discount rate (see text, p. 275, note) calculate the present worth of $1000 due in two years.

(Formula is $P = \frac{S}{(1+r)^n}$ where S is the future sum and n is the number of years for which S is compoundedly discounted.)

10. Take the second rate found in question 8, S being $2000 and n 3 years. Find P.

11. Take third rate found in question 8, S being $5000, and n 4. Find P.

12. If $75 are due in 1918, what is the present worth of the sum on *the same calendar day* in 1917 if the rate of interest is 3 per cent? 5 *per cent? 6 per cent?* Perform the arithmetic process.

13. What is the present worth of this sum in 1915 at 3 per cent; at 5 per cent; at 6 per cent? (A table of the present worth of $1 may be used if at hand; otherwise perform the arithmetic process.)

14. How much is a "four per cent" $1000 bond, maturing in two years worth now, when the actual rate of interest paid on similar bonds now being issued is 4 per cent? 5 per cent? 6 per cent? (In this and the following examples the interest is payable annually, at the end of the year, the first payment being due a year hence. Observe that such a bond may be treated mathematically as containing one income of $40 due one year hence, and one income of $1040 due two years hence.)

15. A bond bearing 5 per cent interest and due in three years is sold at a price to yield 6 per cent. What is its price?

16. What is the present worth of a group of three incomes, $300 the first year, $200 the second, $100 the third year, and nothing thereafter, interest being estimated at 5 per cent?

17. Interest being 4 per cent, what income in perpetuity (perpetual annuity) is the equivalent of $1000 at once; $200 a year hence; $50 a year for three years?

18. Assume that the rate of interest on long time loans rises during a given period from five per cent to six. In what direction and to what extent will the price of real estate yielding comparatively safe permanent incomes change during that period, assuming that no change in the incomes is expected? Is it correct to say that such a change in the price of real estate is due to a change in the returns obtainable in manufacture and commerce?

19. If the world's rate of interest rises, do people put a lower estimate than before upon immediately enjoyable goods (as compared with the same goods in the future) or a higher estimate? Which is cause and which effect?

20. If a business is very successful and its dividends double, what will be the effect on the selling price of its stock?

21. One hundred thousand dollars have been expended in buying land, machinery and other necessary equipment for a manufacturing plant. The amount has been obtained by selling 1000 shares of common stock at par ($100 per share). Assuming that the prices paid for land, machinery and equipment have been the prevailing market prices, will the capital value of the plant conform to the past expenses ($100,000) incurred or to the future dividends anticipated?

22. Given the value of the total product of a factory, the prevailing rate of interest, the cost of raw materials, human services, and upkeep of buildings and machinery (there is not cost of up-keep for the land in this case), how would you proceed to find the value of the *plant?*

Explain fully the principle upon which you would estimate the capital value of land, of buildings, and of machinery, separately.

23. A certain man holds promissory notes which entitle him to receive the following sums: — $1000 two years from now; $2000 four years from now; and $3000 six years from now.

(a) Assuming that the notes are certain to be paid when due, explain fully why their total present value would be some other sum than $6000.

(b) Show how the principle involved applies in the case of the price paid for a factory.

(c) Give *and explain* the formulas for computing the present values in the foregoing cases.

24. The capital stock of a certain company consists of 10,000 shares of a par value of $100 each; its net income is, and promises to remain, $100,000 a year. If the market rate of interest is 5 per cent, at what price will the shares sell?

25. A man buys to-day an annuity which entitles him to receive $1000 per year for 20 years. ($20,000 in all.) Will he be willing to pay for it exactly $20,000, or more, or less? Just how would he calculate the amount he would be willing to pay for it?

(*Note:* Do not go through the mathematical operations, but explain exactly what they would be.)

26. An apple orchard, it is estimated, will in five years from the present begin to yield income. The gross income is calculated at $200 the first year it affords an income; at $250 the next year; at $300 the third; and at $300 for each successive year for ten years. At the end of this period the trees will cease bearing and will sell for firewood for $200, while the land covered formerly by the orchard will be worth $1000. The prevailing rate of interest is 5 per cent.

Explain in detail the method (do not make the numerical calculations) by which the present capital value of the orchard is computed. If you use the term net income in your answer make clear what the term means.

27. If a $100 share of railroad stock sells at par when interest on loans is at 5 per cent, what will be its price when interest rises to 6 per cent? When interest falls to 4 per cent?

28. One year ago the American Cereal Company sold (at par) an issue of four per cent $1000 bonds to mature five years from date of issue. If on account of the war the market rate of interest is now six per cent, would the present value of the bonds be more or less than $1000, and how would it be calculated?

29. Suppose you bought on January 1, 1913, a 20 year annuity yielding $100 annually, payable on the first day of January each year of the 20 years it continues, the first payment to be made Jan. 1, 1913. Making

such assumptions as are necessary, give a formula for computing the sum you must pay for this annuity. Explain your work clearly.

Suppose that on Jan. 1, 1915, the rate of interest on long term investments dropped one-half of one per cent per annum. Would this change in the interest rate affect the value of your annuity purchased Jan. 1, 1913? Give reasons. If so, would its value increase or decrease?

30. (a) The organizers of a certain corporation have estimated after very careful calculation that its annual net earnings will be $1,000,000. How much capital stock will they issue if the corporation is to pay 5 per cent annual dividends?

(b) Assuming that the corporation proves conclusively, within a few years, its ability to make the annual net earnings anticipated by its organizers ($1,000,000), and assuming that the prevailing rate of interest in similar investments is 4 per cent, will the stock sell above par, at par, or below par?

(c) If now the prevailing rate of interest falls from 4 per cent to 3 per cent, what will be the effect on the market price of the stock? Reasons.

(d) If (with no change in the prevailing rate of interest) the net earnings of the trust are doubled, what will be the effect on the market price of the stock?

31. Suppose you own a bond of the face value of $1000 issued by the New York Manufacturing Company on January 1, 1898, for 25 years, bearing interest at 4 per cent on face value; and suppose when issued the bond was sold at par. For how much can you sell that bond on Jan. 1, 1917, just after the annual interest has been paid,— supposing the market rate of interest then at 6 per cent? Show your calculations and briefly but clearly explain the processes,— without solving for final value.

32. Assume two $1,000 bonds of equal security, each paying six per cent on the par value. One bond is to mature ten years from now; the other twenty years from now. How would the present values of these two bonds compare under each of the following hypotheses as to the prevailing rate of interest? (a) If the prevailing rate of interest is 5 per cent? (b) If it is 6 per cent? (c) If it is 7 per cent?

33. A $1000 bond issued in 1905 to run 20 years was purchased in 1910; the bond was of a 6 per cent issue, and the current rate of interest at time of purchase was 5 per cent. What was the price of the bond? Explain your calculations.

34. In a given community where competition is practically perfect, and in which there is no risk of the non-fulfilment of contracts, there is in the hands of certain farmers a large stock of wheat all of the same grade, much of which would be loaned for a consideration. If for every 100 bushels *delivered to-day* on loan, there were required a promise to re-

turn 105 bushels one year hence, lenders would stand ready, in the absence of more favorable terms, to deliver to-day a total of 100,000 bushels, and borrowers to accept to-day deliveries of 60,000 bushels. In case, however, for every 100 bushels delivered to-day the guaranteed return one year hence were 104¾, 104½, and 104¼ bushels respectively, the total deliveries that would be forthcoming on loan would be 90,000, 85,000 and 70,000 bushels respectively. Those who desire to borrow wheat to-day would be willing to take an increase of 12,500 bushels (over and above the 60,000 bushels mentioned above) for every quarter bushel less than 105 bushels which they must promise to return a year hence for every 100 bushels received to-day:

(a) Required the prevailing rate of interest in terms of wheat, with reasons.

(b) If a particular farm in the above-mentioned community yielded a gross rent of 12,000 bushels and a net rent of 5,000 bushels, what would be the capital value of the farm in question?

35. It is estimated that the yield of a lot in a valuable location in a city will be as follows: with a building costing $50,000, the gross rental would be $10,000, the expenses (taxes, repairs, care, etc.) 3,500; with a building costing $200,000 the gross rental would be $22,000, the expenses $10,000. Which would be the better investment if money is to be borrowed at 5 per cent? At 10 per cent? What are the rental value and the probable capitalization of the land alone?

CHAPTER 24

SAVING AND BORROWING

REFERENCES.

Ashley, W. J., English economic history. Ed. 1911. Vol. 1, pt. 1, pp. 148–163.

Hamilton, J. H., Savings and savings institutions. 1902.

Readings, Bullock, 318–324, criticism of the doctrine of saving.

QUESTIONS.

1. Which is the more needful for economic welfare, conservative or cumulative abstinence?

2. Is it money or other things that the borrower wants?

3. If you were starting a factory on credit, would you rent the machines or buy them with borrowed money? Why?

4. When a person borrows money and pays interest on the loan, is *his* purpose essentially the same as when he pays rent for the use of *durable agents?*

5. Through what agency does the Western farmer borrow Eastern capital?

6. How do Englishmen invest in American railroads?

7. Is a man ever justified in borrowing money to spend on consumption goods?

8. Are men less able to bargain for the loan of money than for other things?

9. Can law fix the rate of interest at any point desired? If so, then why not at zero; if not, then why fix any maximum rate of interest?

10. Some money-lenders in cities get 10 per cent a day from fruit-venders for the advance of small sums of money, and the losses are very slight. Pawnbroking pays frequently 25 to 100 per cent per year. In these cases what affects the rate of interest?

11. What would be the effect upon the rate of interest in a new state if it passed a law preventing the collection of loans by outside lenders?

12. In what ways can a lender collect a high rate of interest without appearing to do so?

13. What is the present rate on call loans in the New York money market? On commercial paper 60 to 90 days; at three months; at six months? Ref.: Daily Newspapers.

14. On December 27, 1905, the rate of interest on demand loans reached 100 per cent. With call money at 100 per cent it costs a speculator $277 a day for each $100,000 borrowed. (a) Under what circumstances must speculators pay such a rate? (b) Why do they not use the cheaper time loan? (c) Why does such a loan not run counter to the usury law?

15. Suppose a farmer decided to borrow $2000 at 6 per cent interest for draining and improving his farm. What estimate does the farmer make as to the increased productivity of his farm due to the improvements before he makes up his mind to borrow this amount? Does the capital borrowed produce the interest thereon?

16. If a railroad company employs a watchman at a grade crossing at a salary of $400 a year and it would cost $7,500 to run its tracks under or over the street, thus dispensing with the services of the watchman, what would be the effect of a fall of the rate of interest from 6 per cent to 4 per cent? Why?

17. A company with capital stock to the amount of $1,000,000 borrows an equal sum by bond issue at the rate of 5 per cent to expend in permanent improvements which increase its earnings by $70,000 annually. What are the probable effects upon the amount available for dividends and upon the price of the shares? Would it have borrowed if the rate of interest had been 7 per cent or 8 per cent? If it had been 4 per cent or 3 per cent?

CHAPTER 25

CAPITALIZATION AND INTEREST

REFERENCES.

Fetter, F. A., Interest theories, old and new. 4: 68–92. Capitalization vs. productivity: rejoinder. A. T. Rev., 4: 856–859. 1914. (For those interested in the more theoretical aspects.)

Fisher, Irving, The rate of interest. 1907.

Hadley, Economics, secs. 155–158 (on usury laws).

Materials, 773–782.

Readings, Bullock, 563–568, for historical changes in the rates of interest.

Walker, F. A., Political Economy, 330–340 (on usury laws).

QUESTIONS.

1. Which is the more important for the rate of interest, the amount of money in the banks or the amount of goods in the country?

2. If the loanable funds, including money, in a community suddenly and markedly increase, how will the interest rates on call loans and long time investments respectively be affected?

3. In a panic, interest rises on short loans and prices fall, while it is almost impossible to borrow money; does this show that the amount of money determines the interest rate?

4. When gold is leaving England, the bank raises the rate of discount (interest); does this show that the quantity of money determines the rate of interest?

5. In what ways is the rate of interest affected by the rise or fall of the value of money?

6. What is the effect of a great catastrophe like the San Francisco earthquake and fire upon the rate of interest?

7. What is the effect of the building of new railroads upon the rate of interest, (a) immediately, and (b) in the long run?

8. If large improvements which will greatly increase the production of wealth ten years from now are to be undertaken at the present time on borrowed money, what effect will these operations tend to have, if undertaken, upon the rate of interest at present and upon the rate of interest ten years hence?

9. What is the "money market"? Who are the buyers and sellers, and what do they buy and sell?

10. How do laws fixing a legal rate of interest work in practice?

11. Are interest rates changing in America? If so, how?

12. *Why has interest* been about 10 per cent in the West, 7 per cent *in the Central States, 5* per cent in New York, 4 per cent in Germany?

CHAPTER 26

ENTERPRISE

REFERENCES.

Knoop, Douglas, American Business Enterprise. 1907.

QUESTIONS.

1. Are the dividends on stock in whole or in part enterpriser's profit?

2. Who is the enterpriser in a stock company where there is a superintendent elected by a board of directors, themselves elected by shareholders with one vote per share?

3. A company is organized with $150,000 in common stock all paid in, and held in equal amounts by A, B, and C. The proceeds are invested in lands, buildings, equipment and materials. A becomes an active manager of the business at a salary of $5000, B retains his stock but takes no active part, and C sells his to several other investors. The company pays 6 per cent dividends, but a larger plant being necessary, issues 5 per cent bonds for $100,000 and thereafter pays 7 per cent dividends. By whom is the enterpriser's function exercised?

4. Who is the employer in a coöperative cooper-shop whose superintendent is elected by the workmen?

5. A business conducted by a corporation pays incomes for those services which in the case of a business owned and managed by an individual enterpriser would be remunerated by economic profits. Give the names applied to each of these payments by the corporation, and the function or functions for the discharge of which each is paid.

CHAPTER 27

MANAGEMENT

REFERENCES.

Haney, L. H., Business organization and combination. 1913.

Hoxie, R. F., Scientific management and labor. 1915.

Materials, 204–206, 219–228.

Meade, E. S., The work of the promoter. A. A. A., 20: 559–570. 1902.

QUESTIONS.

1. What is the relative importance of organization in sawing wood, building houses, running a small store, or a large factory?

2. Which wins the battle: the general, the soldiers, or the armament?

3. What determines whether a crop is poor or good: the ground, the weather, or the farmer?

4. One has said: "The natural differences in powers and aptitudes are certainly not greater than are natural differences in stature." Is this sound in an economic sense?

5. Who runs the business in a large store owned by a large family? Who has the risk?

6. Is it production to buy fifty cents' worth of yarn and knit a pair of socks worth twenty-five cents if you enjoy doing it? If you do not enjoy it?

7. Outline the combination of factors that has produced New York bread made from Minnesota wheat.

8. Is advertising of any social service or is its sole purpose to divert trade from one merchant to another?

9. Would you prefer to begin your business career with a large company or with a small merchant? Why?

CHAPTER 28

PROFITS AND COSTS

REFERENCES.

Davenport, H. J., Value and distribution. 1908.

Evans, H. A., Cost keeping and scientific management. 1911.

Green, D. I., Pain-cost and opportunity-cost. Q. J. E., 8: 218–229. 1893–1894.

Materials, 796–799.

Readings, Hamilton, 77–79.

Tipson, F. S., The theory of accounts. 1913.

QUESTIONS.

1. What is the cost of a good you have made entirely with your own labor?

2. What is the difference to the employer between rent, interest, and wages as items of cost?

3. In competitive industry to what kinds of activity are the profits of enterprisers traceable?

4. Are competitive profits a benefit or a detriment to society as a whole?

5. How should the income of an inventor be classified, as wages or profits?

6. Are the profits of the employer deducted from wages? Are the high wages of skilled labor deducted from the wages of unskilled?

7. If the editor of a newspaper owns shares in the newspaper corporation, of what impersonal shares of social income is his personal *income made up?*

8. Business being poor, one employer is making good profits; how different will be the wages he pays from those paid by the unsuccessful employer?

9. When prices fall, what determines which factories shall close, and which workmen shall be discharged?

10. Assuming that a good which has only a direct consumptive use is produced continuously under competitive conditions, how and to what extent does money cost of production operate in the determination of its price? What determines the money cost of production?

11. Are enterprisers' profits a part of the costs of production?

12. "Let it be assumed that a manufacturer of hats faces the following situation: per unit of product he expends $1 for wages and 50 cents for raw materials; the capital employed in producing a hat would elsewhere earn him 15 cents; as employee in some one's else service, he could earn 15 cents for each hat now produced; transferring himself and his productive equipment to the shoe industry, he could obtain a product of $1.85 in place of each hat now produced; he sells his hats at $2.00 each; What is his cost of production and what his profit per hat?" Davenport, Value and distribution, p. 88

CHAPTER 29

VARIOUS SHADES OF PROFITS

REFERENCES.

Materials, 818–819, 822, 823.

QUESTIONS.

1. What are the chief elements of business success?

2. Has "a good chance in life" much to do with success?

3. How many of the men you know at the head of large businesses started life poor? Was the rise in fortune due most often to chance, inheritance of wealth, or exceptional ability and power of work?

4. Does luck have greater influence on business success in an old country or a new one? Ditto in agriculture, mining, commerce, or manufactures?

5. In a certain community an unimproved building lot, a rare coin, and the "good-will" of a business sold for the same sum. The community grew rapidly. At the end of two years, the lot, the coin, and the "good-will" each sold for twice the original amount. Apply the principle of the "unearned increment."

6. What inequality occurs in the changing values of city land-sites? What bearing has this on the question of the unearned "increment"?

7. A miller bought 20,000 bushels of wheat in February at $1.00 per bushel, to be made into flour and marketed in May. In February, May wheat sold at $1.02. In May wheat had fallen to 87 cents. How do millers regularly protect themselves from loss in such circumstances?

CHAPTER 30

COSTS AND COMPETITIVE PRICES

REFERENCES.

Bean, B. C., Cost of production. 1905.

Cole, W. M., Accounting methods for determining costs and prices. A. E. Assn. Bul., 4th ser., 2: 124–135. 1911.

Materials, 410–414.

Source Book, 228–232, 233–246, 247–254.

QUESTIONS.

1. Suppose a watch is offered for sale at $20.00. Under free competition is this price fixed by the manufacturer, or by the cost of the materials and labor entering into the watch, or by both or neither? Explain.

2. Can wages be increased at the expense of profits? If so, within what limits, and by what means? How is it that wages and profits are both comparatively high (a) in the United States, (b) in the United Kingdom?

3. Point out the differences and the similarities between the retail grocery business and the railway business as to (1) capital investment; (2) the possibility of determining the cost in each business of the goods or services sold; (3) the prices and the rates charged in each business; (4) the effect upon prices and rates of a large increase in business in both undertakings.

4. Suppose the costs of production should be reduced 50 per cent immediately and everywhere for the following goods: (1) Rubber, because of the "synthetic process" of making rubber from starch, the sources of cheap starch being potatoes, sago, and corn. (2) Sugar made from cornstalks, straw and banana skins,— materials worthless or almost worthless heretofore.

(a) Would the immediate and the final effect of this halving of the costs of production be beneficial or detrimental to (1) manufacturers' profits in the rubber and sugar industries; (2) employees and wages in the above-named industries; (3) consumers of rubber goods, and sugar?

(b) What effects, if any, would the above changes in production costs *have upon enterprises* and employees engaged in producing potatoes, steel

rails, wheat, lumber and woolen cloth? Would the consumers of the above-named commodities be at all affected by the lessened costs of producing rubber and sugar?

5. Agricultural land, farm machinery, farm animals and human labor are necessary in the production of a crop of wheat. How are the rentals of the durable agents and the wages of labor fixed in this case? Suppose the total product in the above case is 10,000 bushels of wheat. Divide this product among the various costs of production so as to show what gross rent is and what net rent is.

CHAPTER 31

MONOPOLY-PRICES; LARGE PRODUCTION

REFERENCES.

Agger, E. E., Monopoly and competitive prices. A. E. Rev., 3: 589–597. 1913.

Ely, R. I., Monopolies and trusts, 1900.

Jenks, J. W., The trust problem. 1900.

LeRossignol, J. E., Monopolies past and present. 1900.

Materials, 818.

QUESTIONS.

1. If one company controlled all the petroleum in the world, what would it consider in fixing the selling price?

2. What is meant by the statement, frequently heard, that cost of production fixes the price of goods? How does this apply to monopoly price? Explain carefully and diagram.

3. Can the large factory always undersell the small one? Why?

4. One of the subsidiary companies of the Normal Oil Company once issued a stock dividend amounting to 2900 per cent of the outstanding stock. Should this be classified as economic profits, monopoly profits, gambling gains or as something different from any of these?

5. What price would a monopoly set under the following conditions of production and sale?

Units	Cost per unit	Selling price
100	8.00	11.00
200	7.50	10.50
300	7.00	9.50
400	6.00	8.00
500	5.50	7.00

6. A soap monopoly finds that its costs of production and its selling prices vary with output as below.

Output	Total Costs	Selling Price Per Cake
100,000,000 cakes	$4,100,000	6¢
150,000,000 cakes	5,500,000	5⅓¢
200,000,000 cakes	6,100,000	4½¢
250,000,000 cakes	6,600,000	4¢
300,000,000 cakes	7,200,000	3½¢

How many cakes will the monopoly sell under these conditions? Why? Suppose costs of production increase one cent per cake, demand remaining the same. Will this increase in costs have any effect on the output of the soap monopoly?

7. The manufacturer of a certain patent pill finds that his constant costs of production (i.e. the costs that remain unchanged whether the output be large or small) are $100,000. The variable costs of production over and above constant costs and the selling price obtainable for different quantities of output were found to be as follows:

Quantity doz.	Variable Costs per doz. (cents)	Selling Price per doz. (cents)
1,000,000	2	15
1,500,000	1⅞	13
2,000,000	1¾	11
2,500,000	1⅝	9
3,000,000	1½	8
4,000,000	1½	6

How many dozen pills would the manufacturer make and sell? Give reasons.

8. A patented article which costs $20 to make and sell can be sold in the quantities indicated at the prices indicated.

$38.....1500	$40.....1450	$42.....1300
39.....1500	41.....1400	43.....1200

At what price will the manufacturer sell? If the cost per unit increases to $21 when the output falls to 1450, and to $22 when the output falls to 1400 or less, what price should he fix and why? Explain the difference between this and the ordinary case of price fixing under competitive conditions.

9. A gas company having a monopoly in a small town finds that corresponding with various prices per thousand feet, the consumption per month and the expenses vary as follows:

Price	Consumption (1,000 ft.)	Variable Expenses
$1.75	1,000	$ 800
1.50	1,200	850
1.25	1,500	900
1.00	2,000	950
.75	2,250	1,000

The fixed expenses being $500 a month, at what figure will the price be fixed, assuming that there is no fear of competition by electric light or other companies? What items of expense may be deemed fixed, and what variable?

CHAPTER 32

THE PROBLEM OF POPULATION

REFERENCES.

Fetter, F. A., The essay of Malthus. Yale Rev., 7: 153–167. 1898–1899.

Readings, Bullock, 275–286, extract from Malthus.

Readings, Hamilton, 381–382.

QUESTIONS.

1. What limits the number of wild rabbits? Of tame pigeons? Do the same influences act in the case of men?

2. If the maximum human birth-rate were constantly maintained, what would be the effect on the average duration of life?

3. Discuss the following statement from an economic standpoint:

"But, unfortunately, there is a limit to the supporting capacity of the earth, and, according to scientists, this limit will be reached when the earth's population is 6,000,000,000, or four times as much as its present estimated number. As the earth doubles her children every 140 years, it is easy to calculate that in 280 years, or in the year 2,180, there will be positively no room for more, and unless by that time there are facilities for emigrating to other planets some serious steps will have to be taken to restrict the growth of our numbers.

"If by any chance it should be possible to surmount the difficulty of our support, and if the population continues to increase at present rates, a more difficult problem still will have to be faced a thousand years or so later, in the year 3160. For by that year — which, happily, none of us may see — the earth's brood will have grown to such proportions that every square yard of solid ground will have its population of three persons, each inhabitant of the earth being thus strictly limited to three

square feet of land for all purposes of support and domicile. And here we may leave the problem, confessing our impotence to cope with it, and selfishly congratulating ourselves that for our time at least the earth will furnish ample elbow room."

4. Community X has a total population of 527,490. There are on an average 497 births in this community each week and 375 deaths each week. (a) What is its birth-rate? (b) What is its death-rate? (c) What is the probable location (geographically) of this community? (d) What is its probable economic condition? Prove your answer in each case.

5. Suppose that for the period of one hundred years the death rate in a populous nation has remained constant at 20; that the population has been and is entirely dependent for its support, so far as material resources are concerned, upon its own territory, and has never engaged in foreign trade; that the said territory has not changed in area and was all under cultivation from the beginning of the period; and that, moreover, throughout the entire one hundred years the birth rate has continued constantly at the maximum. From the preceding data, point out the general character of the changes which must necessarily have taken place in the productive industrial processes, and explain why such changes must have occurrred.

CHAPTER 33

VOLITIONAL DOCTRINE OF POPULATION

REFERENCES.

Materials, 123–134 (Extracts from same source).
Readings, Hamilton, 388–392.
Source Book, 163–175 (Extracts from same source).

QUESTIONS.

1. Has the principle of the survival of the fittest any influence on the population of America?

2. What application has the principle of economic utilization to the question of population?

3. If the laborers acquire tastes for better food, clothing, houses, music, theaters and the like will their wages be affected?

4. From the following and similar figures, a German statistician formulated what is called "Engel's law" as to the proportion of the expenditures going for food.

PER CENT SPENT BY FAMILIES IN SAXONY

	Laboring		Middle Class		Well-to-do	
Food	62		55		50	
Clothing	16		18		18	
Shelter	12	95	12	90	12	85
Fire and light	5		5		5	
Education	2		3.5		5.5	
Public safety	1		2.		3.	
Health	1	5	2.	10	3.	15
Labor	1		2.5		3.5	

How would you formulate the "law"?

5. Work out the following table. Summarize results and compare with the results obtained by Engel.

Table showing approximate expenditures of students in Arts courses in Cornell University (about the year 1900) in four groups.

	I	II	III	IV
Food	$112.00	$146.50	$149.00	$156.00
Clothing	48.00	68.00	216.00	253.00
Lodging	45.00	67.00	102.00	111.00
Tuition, books, apparatus, uniforms, traveling to and from the university	146.00	170.50	224.00	230.00
Recreation and sports	9.00	48.00	59.00	250.00
Total	$360.00	$500.00	$750.00	$1000.00

CHAPTER 34

DECREASING AND INCREASING RETURNS

REFERENCES.

Fetter, F. A., Population or prosperity. A. E. Rev., 3 (no. 1, supp.) 5–19. 1913.

Willcox, W. F., The density of population in the United States in 1890. A. E. Assn., Econ. Studies, 1 (supp.); 115–119. Discussion, 119–123. 1896.

Willcox, W. F., Area and population of the United States at the eleventh census. Ibid., 2: 207–257. 1897.

Willcox, W. F., Density and distribution of population in the United States at the eleventh census. Ibid., 2: 385–455. 1897.

Willcox, W. F., The expansion of Europe in population. A. E. Rev., 5: 737–752. 1915.

QUESTIONS.

1. Senior states that additional labor when employed in manufacture is more, when employed in agriculture is less, efficient in production. (a) What economic law (or laws) is here referred to? (b) Prove the truth or falsity of either statement.

2. Criticize the following, giving your reasons for believing it correct or incorrect: "Manufacturers frequently show increasing returns for every dollar invested, whereas agriculture is subject to the law of diminishing returns."

3. Suppose an immigration of a million a year for a period of ten years into a country, the immigrants having the same average standard of life and the same average ability as the natives. Under what conditions would (a) decreasing returns result? (b) increasing returns result?

CHAPTER 35

BASIC MATERIAL RESOURCES; THEIR USE, CONSUMPTION, AND CONSERVATION

REFERENCES.

Callender, ch. XIII.

Fernow, B. E., Economics of forestry. 1902. Ch. XI.

Materials, 77–102 (Extracts from same source).

Pinchot, Gifford, The Conservation of natural resources. Farmer's Bul. 327, U. S. Dept. of Agric., 1908.

Pinchot, Gifford, The fight for conservation. 1910.

Source Book, 91–101, 102–116 (Extracts from same source), 265–274.

Van Hise, C. R., The conservation of natural resources in the United States. 1910.

QUESTIONS.

1. What kinds of material agents will probably increase in value relative to other kinds?

2. It is said that the iron and coal deposits of China are the richest in the world. With these resources in conjunction with cheap labor, could China develop into the greatest industrial nation of the world? What effect would the sudden exploitation of the resources have on the price of iron and steel?

3. What is the present importance of water power in the industry of the country? What appears to be its future?

4. What are some of the chief problems of "conservation" and how *do the princi*ples of depreciation, repairs and usance apply to each of *them?*

CHAPTER 36

MACHINERY AND WAGES

REFERENCES.

Commons, J. R., Trade Unionism and labor problems. 1905. Pp. 250–273. From Yale Rev., 13: 251–273. 1904.

Materials, 158–159, 160, 161–163, 164–170 (Extract from Quaintance).

Quaintance, H. W., The influence of farm machinery on production and labor. A. E. Assn. Pubs., 3d ser., 5: 1–106. 1904.

Readings, Bullock, 125–154, on inventions and the factory system.

Readings, Hamilton, 449–450 (Extract from White), 450–452.

Source Book, 206–213.

White, Henry, Machinery and labor. A. A. A., 20: 223–231. 1902.

QUESTIONS.

1. Why has machinery changed the relations of workman to master?

2. What is the difference to the workman whether he becomes more efficient or works with a better machine?

3. Is the work of any kind fixed in quantity? What would cause it to change?

4. Is an ultimate decrease in employment in the particular industry into which labor saving machinery is introduced likely to prove the rule or exception?

5. What kinds of laborers were thrown out of employment by the invention of the type-writer? What kinds of labor found employment as a result of its invention? Was the net result a gain or a loss of employment?

6. Answer the same questions with regard to the invention of railroads, mowing-, binding-, and threshing-machines; or the new roller-process of flour milling.

7. The introduction of glass-blowing machines enables one man to do the work of ten men using the old hand processes. Will this invention decrease the demand for labor permanently in the glass-blowing industry?

8. If a machine which does work previously performed by hand is suddenly introduced into a trade, what conditions will determine the effect of this in the long run upon (a) the workmen who have been doing the work by hand; (b) the number employed in that trade; (c) the average wages in that trade? Assume that there is no labor organization in the trade.

9. In a given trade in which there is no union a machine is suddenly

introduced. This machine can produce goods of the same quality as were formerly produced by skilled hand workers, and requires for its operation workers of equal skill. What is the immediate effect of the introduction of the machine on the output, the price of the product, and demand for, and the wages of, labor? Trace the ultimate effect of the introduction of the machine upon wages in the trade under consideration, and throughout all trades.

10. In case some new process is discovered of performing some particular task,— like that of the baker,— with the labor of fewer hands, both absolutely and relatively (even when account is taken of those who may be newly employed in making the apparatus required by the new process), what fundamental reasons are there, apart from growth in population, or change of residence, for thinking, *first*, that the laborers displaced by the new process will eventually find another field of employment; *second*, that in another field of employment there will be an effective demand for the laborers displaced?

11. An automatic telephone exchange system costing $200,000 supplants 100 girl operators previously required in the exchange. If this is a typical instance of the cost of introducing the automatic system, and if its introduction saves the company $20,000 annually but is followed by no extension in the demand for telephone service, will the diminution in employment in telephone exchanges be offset by the increase in employment required to install the new system, or in any other way?

12. What concern have the poor in the abundance of capital? The rich in the abundance of labor?

CHAPTER 37

WASTE AND LUXURY

REFERENCES.

Lapp and Mote, Learning to earn, ch. VIII.
Laveleye, E. L., Luxury (trans., 1891).
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QUESTIONS.

1. If all the day-laborers should agree to work with one hand tied behind them, would their wages go up or go down? Would it be good or bad for the whole class of laborers?

2. Why do workmen in putting up a building often carelessly or intentionally break glass and waste materials? Does their destruction of materials benefit labor?

3. If the government expends $1,000,000 in dredging a river which